

**ABSTRACT**

A Wireless Local Area Network (WLAN) processing component includes a network interface and a processor. The network interface interfaces the WLAN processing component to a plurality of Wireless Access Points (WAPs) of the WLAN, at least some of the plurality of WAPs having directional antennas. The WLAN processing component directs the plurality of WAPs to perform a plurality of beaconing operations, each of the beaconing operations corresponding to a respective WAP of the plurality of WAPs such that during the beaconing operation the respective WAP transmits a substantially constant power beacon. During the beaconing operations, the WLAN processing component directs non-beaconing WAPs having directional antennas to listen for the transmitted beacon, direct an approximate maximum gain vector of the directional antenna toward the transmitted beacon, determine a relative angular position of the approximate maximum gain vector, and measure a received strength of the transmitted beacon. The WLAN processing component then uses collected information to determine relative radio positions of the plurality of WAPs within the WLAN.